

TABLE 6. Discussion of pollen zones depicted in figure 8.

<p>Zone 7 0 - 11 cm</p> <p>1996 to < 1963</p>	<ul style="list-style-type: none"> • Arboreal taxa stable except for <i>Quercus</i> which increases. • Compositae (high and low-spine) and Graminea increase. • Coiled microforams increase dramatically. 	<p>Modern zone, defined by an increase in microforam linings (fig. 9H) possibly resulting from the rise in salinity levels after construction of the Mississippi River/ Gulf Outlet Canal in the late 1950's.</p>
<p>Zone 6 11 - 77 cm</p> <p>< 1963 to > 1830</p>	<ul style="list-style-type: none"> • Arboreal taxa decline, especially TCT. • Non-arboreal taxa remain unchanged except Cheno-Am which fluctuates. • Compositae (low-spine) rises dramatically, then begins declining. 	<p>Defined by the dramatic decrease in TCT and the large increase in low-spine Compositae. The TCT decline records the historic decline in <i>Taxodium distichum</i> (bald cypress) resulting from intensive logging between 1890 and 1925 and the slightly earlier logging associated with the expansion of New Orleans. Continued increase of low-spine Compositae is the result of logging and/or expanding settlement.</p>
<p>Zone 5 77 - 106 cm</p> <p>> 1830 to 550 \pm 50 yr BP (1350 - 1450; uncalibrated)</p>	<ul style="list-style-type: none"> • Arboreal taxa remain the same except <i>Quercus</i> which declines. • Cheno-Am and Compositae (high-spine) remain low. • Compositae (low-spine) begins increase. • Cyperaceae, Graminea, <i>Sagittaria</i>, and <i>Typha</i> decline. • <i>Vigna luteola</i> appears for the first time. 	<p>Most noticeable is the increase in low-spine Compositae (fig. 9F) and the appearance of <i>Vigna luteola</i> (fig. 9G) (cow pea) at 85 cm, an Old World domesticate that probably made its first appearance after colonization of New Orleans in 1717. The increase in the sun-loving, low-spine Compositae supports the hypothesis that Zone 5 reflects the period of colonization and clearing of the New Orleans area.</p>
<p>Zone 4 106 - 214 cm</p> <p>550 \pm 50 (1450 - 1350; uncalibrated) to >1000 \pm 60 yr BP</p>	<ul style="list-style-type: none"> • <i>Pinus</i>, <i>Quercus</i>, <i>Salix</i>, and TCT increase. • Cheno-Am and Compositae remain low. • Cyperaceae and Graminea are abundant. • <i>Sagittaria</i> appears for the first time. • <i>Typha</i> reaches a peak near the top of this zone. 	<p>The return of wetland taxa such as <i>Salix</i>, Cyperaceae (fig. 9E) and <i>Typha</i> indicates an end to the drier conditions of Zone 3. Although Zone 4 is characterized by a return to wetter conditions, the abundance of Cyperaceae and Graminea, and the appearance of <i>Sagittaria</i>, make this wetland qualitatively different from the wetland of Zone 2. Zone 4 has a stronger marsh character and probably records the beginning of the disintegration of the St. Bernard deltaic plain following its maximum development.</p>

<p>Zone 3 214 - 305 cm</p> <p>>1000 ± 60 to 2360 ± 60 yr BP</p>	<ul style="list-style-type: none"> • <i>Juglans</i> and Piperaceae make their only appearance. • <i>Pinus</i>, <i>Quercus</i>, and Compositae (low-spine) are common. • <i>Salix</i> and TCT decline. • Chen-Am, Compositae (high-spine), and <i>Typha</i> decline. • Cyperaceae and Graminea increase at the initiation of the zone and subsequently disappear and decline, respectively. 	<p>The presence of <i>Juglans</i> (and possibly Piperaceae) indicates a shift to drier, more terrestrial, conditions than those reflected in Zone 2. This conclusion is supported by the decline of <i>Salix</i>, Chen-Am, and <i>Typha</i>. Following the delta model (Coleman and Roberts, 1989), Zone 3 is composed of the vegetation of the mature delta plain. That is, as the delta prograded further seaward of the core site, the site became more terrestrial in character.</p>
<p>Zone 2 305 - 384 cm</p> <p>2360 ± 60 to 3180 ± 50 yr BP</p>	<ul style="list-style-type: none"> • <i>Pinus</i> and <i>Quercus</i> common. • <i>Salix</i> reaches a peak. • TCT (Taxodiaceae/Cupressaceae/Thuja) generally increases. • Chen-Am (Chenopodiaceae-Amaranthaceae) fluctuates but maintains a strong presence throughout. • Compositae (high-spine), Graminea and <i>Typha</i> increase in the middle of the zone. • Compositae (low-spine) and Cyperaceae are present but rare. 	<p>The presence of <i>Quercus</i>, <i>Salix</i> and TCT (fig. 9A) reflects the proximity of floodplain forests. Chen-Am (fig. 9B) and <i>Typha</i> (fig. 9C) are typical pond or stream-side taxa in fresh to brackish water marshes. The presence of Compositae (high-spine) and Graminea (fig. 9D) is consistent with a marsh environment, perhaps along the delta margin. Zone 2 is synchronous with the developmental phase of the St. Bernard delta.</p>
<p>Zone 1 384 - 396 cm</p> <p>3180 ± 50 to 8420 ± 60 yr BP</p>	<ul style="list-style-type: none"> • Pyrite abundant in sample. • Pollen not abundant. 	<p>¹⁴C age is old compared to previous work in the area (Frazier, 1967). The date, on decomposed plant fragments in the interdistributary clay, probably reflects older, redeposited, organic material.</p>
<p>Source: U.S. Geological Survey Open-File Report 98-36. Carbon storage and late Holocene chronostratigraphy of a Mississippi River deltaic marsh, St. Bernard Parish, Louisiana (H.W. Markewich, ed.). Last Updated on 2/5/98 by Gary R. Buell</p>		